REMARKS

Claims 1, 3-7, 9-13, 15-21 and 23-28 are pending in the subject application. Claims 1, 2, 9-11, 13, 14, 16, 17, 23-25, 27 and 28 have been examined and stand rejected. Claims 4-8, 12, 18-22 and 26 have been withdrawn as non-elected claims due to a previous election of species requirement. It is noted that claims 3 and 15 are encompassed by the elected embodiment and should therefore be examined (see, page 13, lines 25-27 of the specification, which describes that the fins of the embodiment of Fig. 5 can be hollow to permit cooling medium to extend within the fins).

By way of the above amendment, claims 1, 6, 13 and 28 have been amended, and claims 2, 8, 14 and 22 have been canceled without prejudice or disclaimer of the subject matter thereof. In addition, the withdrawn claims are dependent from the independent claims and should therefore be allowed in the event the examiner finds the examined claims allowable. Favorable reconsideration of the application and allowance of all of the pending claims are respectfully requested in view of the following remarks.

Claims 1, 13, 16, 17, 27 and 28 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,966,615 to Linden et al. ("Linden"). In addition, claims 1, 2, 13, 14, 16, 17, 27 and 28 stand rejected under 35 U.S.C. §102(b) as being anticipated by Japanese Patent Document No. JP 11060287 to Mitsuhiro et al. ("Mitsuhiro"). Further, claims 9-11 and 23-25 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Linden in view of U.S. Patent No. 5,897,682 to Koaizawa et al. ("Koaizawa") or Mitsuhiro in view of Koaizawa. Applicants respectfully traverse these rejections based upon the above amendments and the following remarks.

Independent claims 1 and 28 were amended to recite the additional features of claim 2 (now canceled). Claim 1 was amended to recite a heat exchanger system for cooling a fiber moving continuously through the heat exchanger, where the heat exchanger system comprises an outer tube section, an inner tube section disposed within and separated a selected distance from the outer tube section to form an annular gap therebetween, where the inner tube section includes an internal passage configured to receive and cool the fiber as the fiber moves through the heat

exchanger, and a plurality of fins extending transversely from internal peripheral wall portions of the inner tube section toward a central axis of the inner tube section. Claim 1 further recites that the fins are formed by a spiraling element extending in an axial dimension along an internal periphery of the inner tube section, and the fins facilitate heat transfer between a cooling medium flowing through the annular gap and a coolant fluid flowing within the inner tube section during system operation.

Independent claim 28 recites a exchanger system for cooling a fiber moving continuously through the heat exchanger, where the heat exchanger system comprises an outer tube section, an inner tube section disposed within and separated a selected distance from the outer tube section to form an annular gap therebetween, where the inner tube section includes an internal passage configured to receive and cool the fiber as the fiber moves through the heat exchanger, and a means for facilitating heat transfer between a cooling medium flowing through the annular gap and a coolant fluid flowing within the inner tube section during system operation. Claim 28 further recites that the means for facilitating heat transfer comprises a spiraling element extending in an axial dimension along an internal periphery of the inner tube section and transversely from internal peripheral wall portions of the inner tube section toward a central axis of the inner tube section.

Similarly, independent claim 13 was amended to recite the additional features of claim 14 (now canceled). In particular, claim 13 recites a method of cooling a fiber in a heat exchanger system, the system including a heat exchanger with an outer tube section, an inner tube section disposed within and separated a selected distance from the outer tube section to form an annular gap therebetween, and a plurality of fins extending transversely from internal peripheral wall portions of the inner tube section toward a central axis of the inner tube section, where the fins are formed by a spiraling element extending in an axial dimension along an internal periphery of the inner tube section. The method comprises passing a fiber through an internal passage of the inner tube section between the fiber inlet and the fiber outlet, directing a cooling medium through the annular gap, and directing a coolant fluid through the internal passage of the inner

tube section and around the fins to facilitate heat transfer between the cooling medium and the coolant fluid.

Neither Linden nor Mitsuhiro discloses or suggests the combined features of each of claims 1, 13 and 28.

Linden teaches an apparatus for cooling a fiber that includes an internal cooling pipe 9 with partition plates 19 extending from the internal wall portions of the cooling pipe, and a cooling jacket 15 that surrounds the cooling pipe.

Linden fails to teach or suggest the feature of fins extending transversely from internal peripheral wall portions of the inner tube section toward a central axis of the inner tube section and that are formed by a spiraling element extending in an axial dimension along an internal periphery of the inner tube section as recited in claims 1 and 13. Linden further fails to teach or suggest the feature of a means for facilitating heat transfer that comprises a spiraling element extending in an axial dimension along an internal periphery of the inner tube section and transversely from internal peripheral wall portions of the inner tube section toward a central axis of the inner tube section as recited in claim 28. As noted in Linden (see Col. 3, lines 7-13), the partition plates within the cooling tube of Linden are ring-shaped, and these ring-shaped partitions cannot be reasonably construed as a spiraling element as recited in the claims.

Since Linden fails to teach each and every element of claims 1, 13 and 28, these claims are not anticipated by and should be allowed over Linden. The Examiner is therefore requested to withdraw the rejection of these claims based upon Linden and to allow these claims.

It is noted that Koaizawa also fails to teach fins or any other structure within an internal tube section in which the fiber flows, let alone the feature of a spiraling element as recited in claims 1, 13 and 28. Accordingly, there is no combination of Linden with Koaizawa that could render the independent claims obvious.

Claims 9-11, 16, 17, 23-25 and 27 depend from claim 1 or claim 13 and therefore include all of the limitations of their parent claims. Therefore, these claims should also be allowed over Linden or any combination of Linden with Koaizawa, and the Examiner is requested to withdraw the rejections of and to allow these claims.

Mitsuhiro teaches a drawing device for drawing an optical fiber. The apparatus includes an optical fiber travel tube that includes grooves on the inner surface, preferably a spiral groove formed in the longitudinal direction on the inner surface of the tube. However, there is no disclosure or suggestion in Mitsuhiro of fins or any other structure that extend transversely from internal peripheral wall portions of the travel tube toward a central axis of the travel tube as recited in claims 1, 13 and 28. There is further no disclosure or suggestion in Mitsuhiro of a spiraling element extending in an axial dimension along an internal periphery of the inner tube section and transversely from internal peripheral wall portions toward a central tube axis as recited in these claims.

The Examiner apparently construes the spiral groove described in Mitsuhiro as the spiral element of the claims. However, the groove of Mitsuhiro, which is essentially a channel or cavity extending into an internal surface of the tube, is clearly different from and cannot reasonably be construed as a spiraling fin or element that extends transversely from internal wall portions of a tube toward a central axis of the tube.

Accordingly, Mitsuhiro fails to teach or suggest each and every element of claims 1, 13 and 28. These claims are therefore not anticipated by and should be allowed over Mitsuhiro, and the Examiner is requested to withdraw the rejections of these claims based upon this reference.

As noted above, Koaizawa further fails to teach or suggest fins or any other structure within an internal tube section in which the fiber flows, let alone the feature of a spiraling element as recited in claims 1, 13 and 28. Accordingly, there is no combination of Mitsuhiro with Koaizawa that could render the independent claims obvious.

Claims 9-11, 14, 16, 17, 23-25, 27 and 28 depend from claim 1 or claim 13 and therefore include all of the limitations of their parent claims. Therefore, these claims should also be allowed over Mitsuhiro or any combination of Mitsuhniro with Koaizawa, and the Examiner is requested to withdraw the rejections of and to allow these claims.

In view of the foregoing, the Examiner is respectfully requested to withdraw the rejections and to find the application to be in condition for allowance with claims 1, 3-7, 9-13, 15-21 and 23-28. However, if for any reason the Examiner feels that the

application is not now in condition for allowance, the Examiner is respectfully requested to call the undersigned attorney to discuss any unresolved issues and to expedite the disposition of the application.

A petition for a one month extension of time, along with the large entity extension of time fee, is being submitted along with this Amendment. Applicant hereby petitions for any additional extension of time that may be required to maintain the pendency of this case, and any required fee for such extension is to be charged to Deposit Account No. 05-0460.

Respectfully submitted,

/Andrew J. Aldag/
Andrew J. Aldag
Registration No. 40,483

EDELL, SHAPIRO & FINNAN, LLC
1901 Research Boulevard, Suite 400
Rockville, Maryland 20850-3164
(301) 424-3640
Filed Electronically on: January 2, 2007